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Hydrophilic Silica-Polypeptide Composite Particles ERICK SOTO-CANTU, PAUL RUSSO, Department of Chemistry and Macromolecular Studies Group, Louisiana State University — Composite, pH-responsive particles have been synthesized by covalently attaching a simple polypeptide to a silica core. The synthesis begins with the production of organophilic poly(benzylglutamate)-coated silica particles.[1] The particles are rendered hydrophilic by cleaving the benzyl side group by treatment with hydrogen bromide in benzene. The resulting poly(glutamic acid)-coated silica spheres exhibit a change in hydrodynamic radius in response to pH stimulus. The size transition is due to a change in the polypeptide conformation, as deduced from circular dichroism measurements.

[1]Fong,B.; Russo, P.S. Organophilic Colloidal Particles with a Synthetic Polypeptide Coating. *Langmuir* **1999**, 15, 4421-4426.

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